

WHAT IS CLAIMED IS:

- 1 1. A storage subsystem, comprising:
2 a controller having a plurality of ports;
3 a plurality of storage devices configured store information;
4 a lock table including attribute information and retention information for each
5 of a plurality of storage volumes presented to a host device, the plurality of storage volumes
6 including a non-virtual volume that maps to a first storage device of the storage subsystem
7 and a virtual volume that maps to a second storage device of an associated storage subsystem,
8 the associated subsystem being linked to the storage subsystem via a communication link,
9 wherein the controller is configured to receive and process a request from a
10 host to modify an attribute of the virtual volume.
- 1 2. The storage subsystem of claim 1, wherein the lock table includes a
2 permission field and a retention period field.
- 1 3. The storage system of claim 1, wherein the controller includes a locker
2 module that process the request from the host to modify the virtual volume that is located in
3 the associated subsystem.
- 1 4. The storage system of claim 3, wherein the locker module sends a
2 request to modify the attribute of the virtual volume to a locker module of the associated
3 subsystem.
- 1 5. A method for managing a storage system, comprising:
2 presenting a plurality of storage volumes to a host via a first storage
3 subsystem, the plurality of storage volumes including a non-virtual volume that maps to a
4 storage area within the first storage subsystem and a virtual volume that maps to a storage
5 area within a second storage subsystem that is different from the first subsystem;
6 receiving at the first subsystem a first request from a host to modify an
7 attribute of a target storage volume, the target storage volume being one of the plurality of
8 storage volumes presented to the host; and
9 sending a second request from the first subsystem to the second subsystem if
10 the target volume is determined to be the virtual volume, the second request being a request
11 to modify the attribute of the target volume.

1 6. The method of claim 5, further comprising:
2 modifying the attribute of the target volume by a controller of the second
3 subsystem according to the second request.

1 7. The method of claim 6, further comprising:
2 sending a first report of the attribute modification from the second subsystem
3 to the first subsystem; and
4 sending a second report of the attribute modification from the first subsystem
5 to the host.

1 8. The method of claim 5, further comprising:
2 modifying the attribute of the target volume by a controller of the first
3 subsystem if the target volume is the non-virtual volume.

1 9. The method of claim 8, wherein the first subsystem includes a first
2 locker module to process the first request from the host, and the second subsystem includes a
3 second locker module to process the second request from the first subsystem.

1 10. The method of claim 5, wherein the first request is a request to lock the
2 target volume to grant only read access to the target volume.

1 11. The method of claim 10, wherein the second request is a request to
2 lock the target volume to grant only read access to the target volume.

1 12. The method of claim 10, wherein a lock table associated with the target
2 volume is updated once the attribute of the target volume has been modified.

1 13. The method of claim 12, wherein the lock table includes an attribute
2 field and a retention period field.

1 14. The method of claim 13, wherein the attribute of the target volume
2 cannot be modified if a retention period associated with the retention field for the target
3 volume is not expired.

1 15. The method of claim 5, wherein the first and second subsystems are
2 disk array units.

1 16. A computer readable medium including a computer program for
2 managing a storage subsystem, the computer program comprising:
3 code for presenting a plurality of storage volumes to a host via a first storage
4 subsystem, the plurality of storage volumes including a non-virtual volume that maps to a
5 storage area within the first storage subsystem and a virtual volume that maps to a storage
6 area within a second storage subsystem that is different from the first subsystem;
7 code for receiving at the first subsystem a first request from a host to modify
8 an attribute of a target storage volume, the target storage volume being one of the plurality of
9 storage volumes presented to the host; and
10 code for sending a second request from the first subsystem to the second
11 subsystem if the target volume is determined to be the virtual volume, the second request
12 being a request to modify the attribute of the target volume.

1 17. The computer program of claim 16, wherein the computer readable
2 medium is provided in a storage subsystem.